Service
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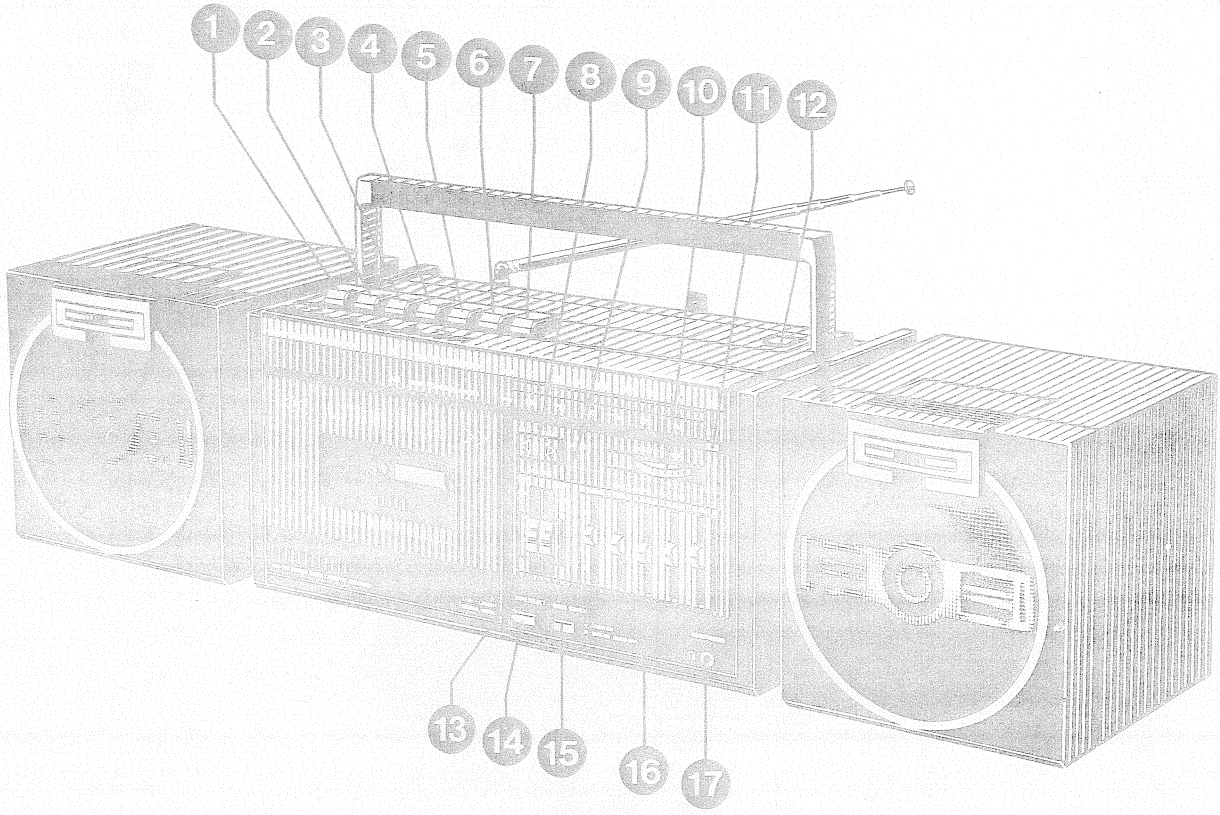
Service Manual



38 227 A12

Documentation Technique Service Dokumentation Documentazione di Servizio Huolte-Ohje Manual de Servicio Manual de Serviço

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PHILIPS

Published by
Audio/Video Service

SPECIFICATION

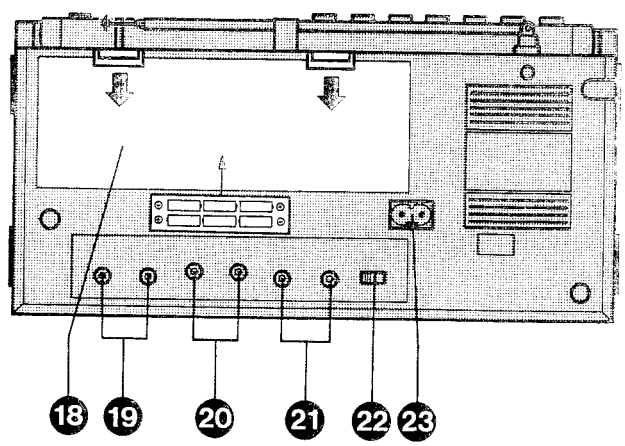
	: 9 V (6× R20)
	: /00 220 V 50 Hz /01 110/220 V 50 Hz /10 240 V 50 Hz
F-FM	: 10.7 MHz
F-AM	: 455 kHz
FM	: 87.5-108 MHz
MW	: 520-1605 kHz
SW	: 3.9-12 MHz

Tape speed	: 4.76 cm/sec ± 3%
Wow and flutter	: ⩽ 0.35% limit ⩽ 0.16% nominal
Frequency response	: 100 Hz- 8 kHz +4 dB-8 dB limit 100 Hz-11 kHz nominal
S/N ratio	: 32 dB limit 40 dB nominal
Track separation	: 50 dB limit 60 dB nominal

CONNECTIONS AND CONTROLS

1			S306
2			
3			S306
4			S306
5			S306,S300
6			S306,S300
7		Reverse during playback	S303
8		Tape direction	D300,D301
9		Stereo	D303
0		Tuning	
1		Built in	
2	Wave range selector		S1

13			VR105,VR205
14	Tape selector		S302
15	Mode selector, tape/radio		S301
16		Equalizer	VR100...VR104 VR200...VR204
17			J301
18	Battery compartment		
19			J102,J202
20		Aux	J103,J203
21			J101,J201
22	Beat cancel selector		S304
23	V~		J401



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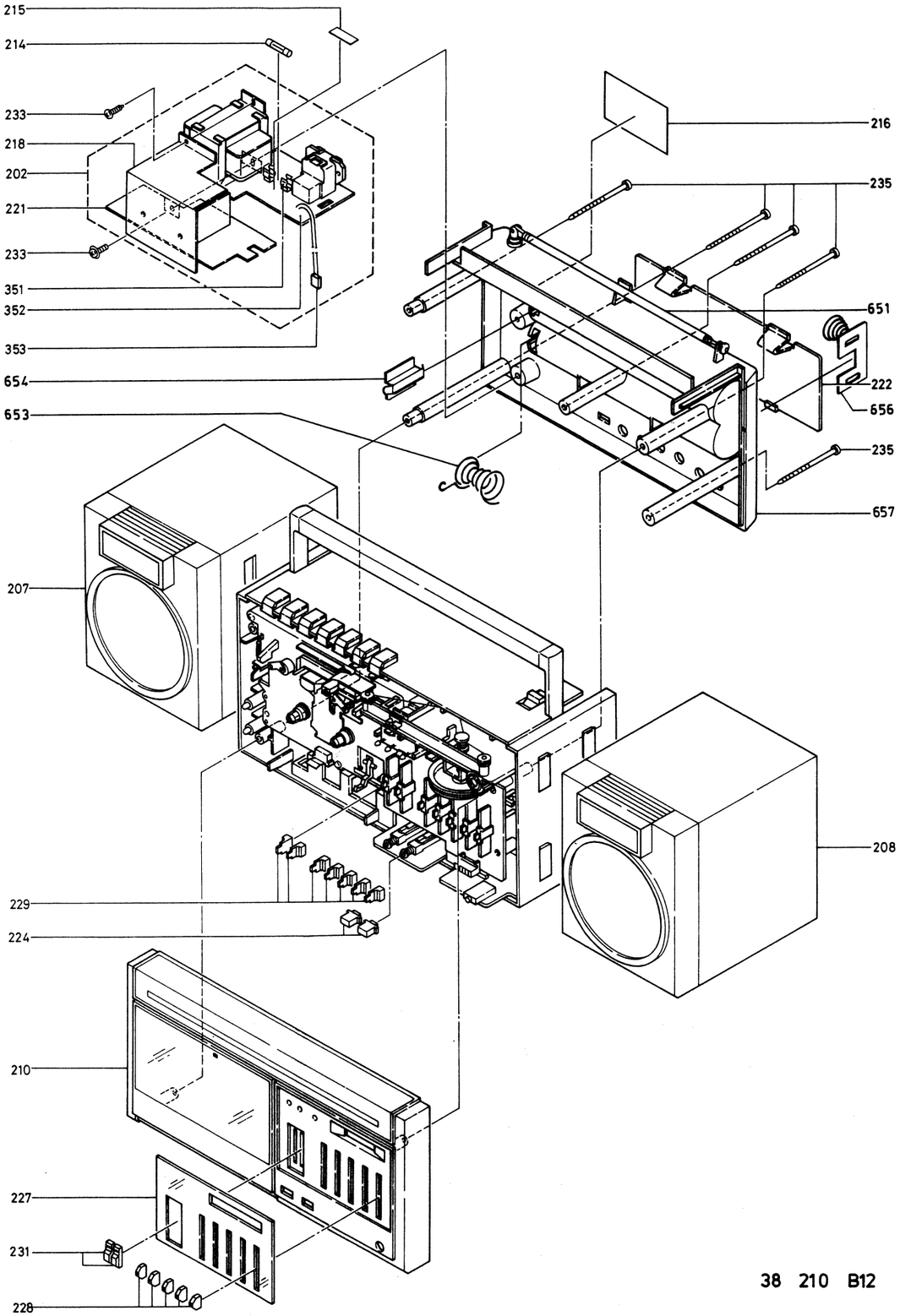
UNIT ASSEMBLY EXPLODED VIEW



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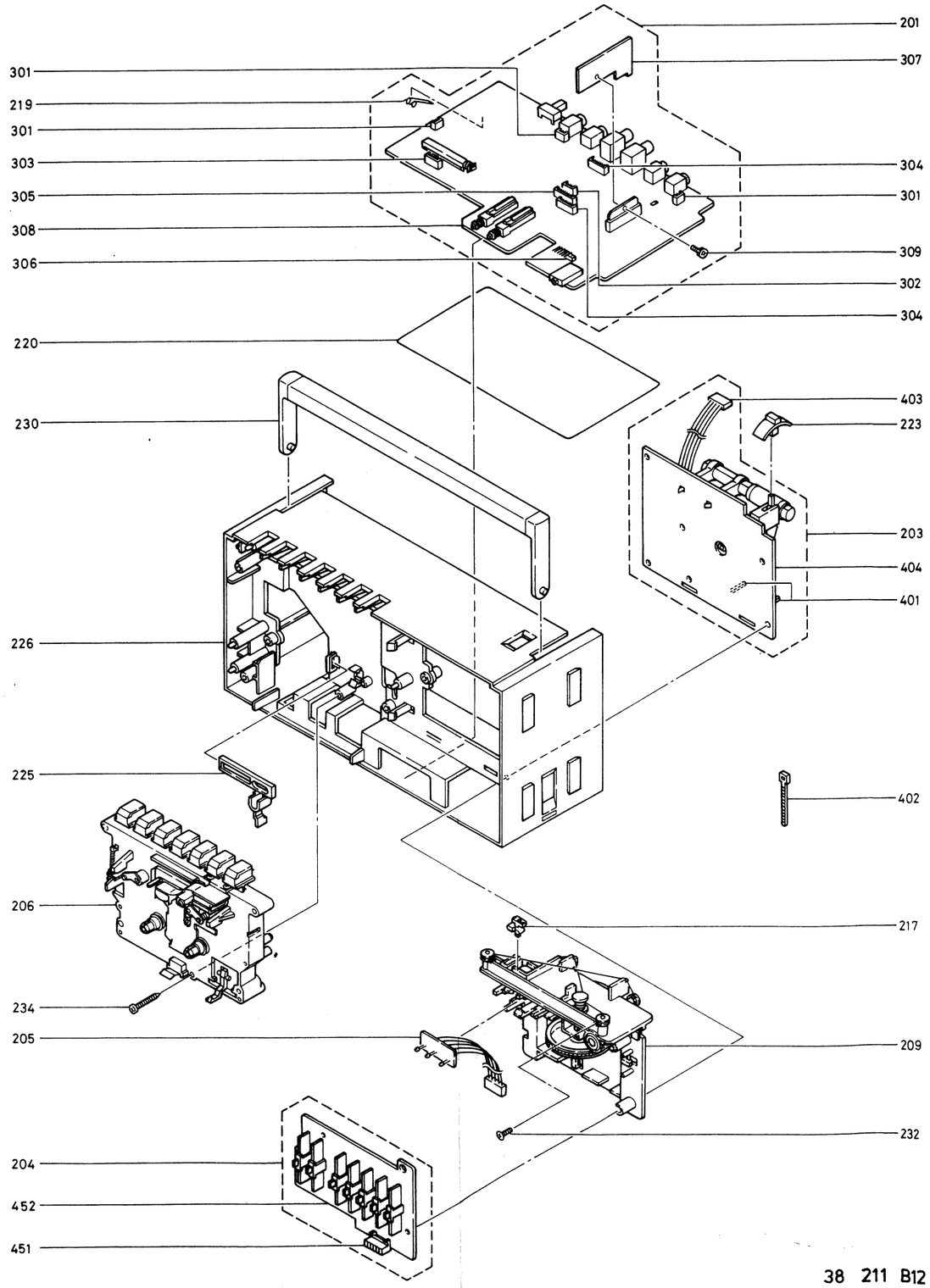
UNIT ASSEMBLY EXPLODED VIEW



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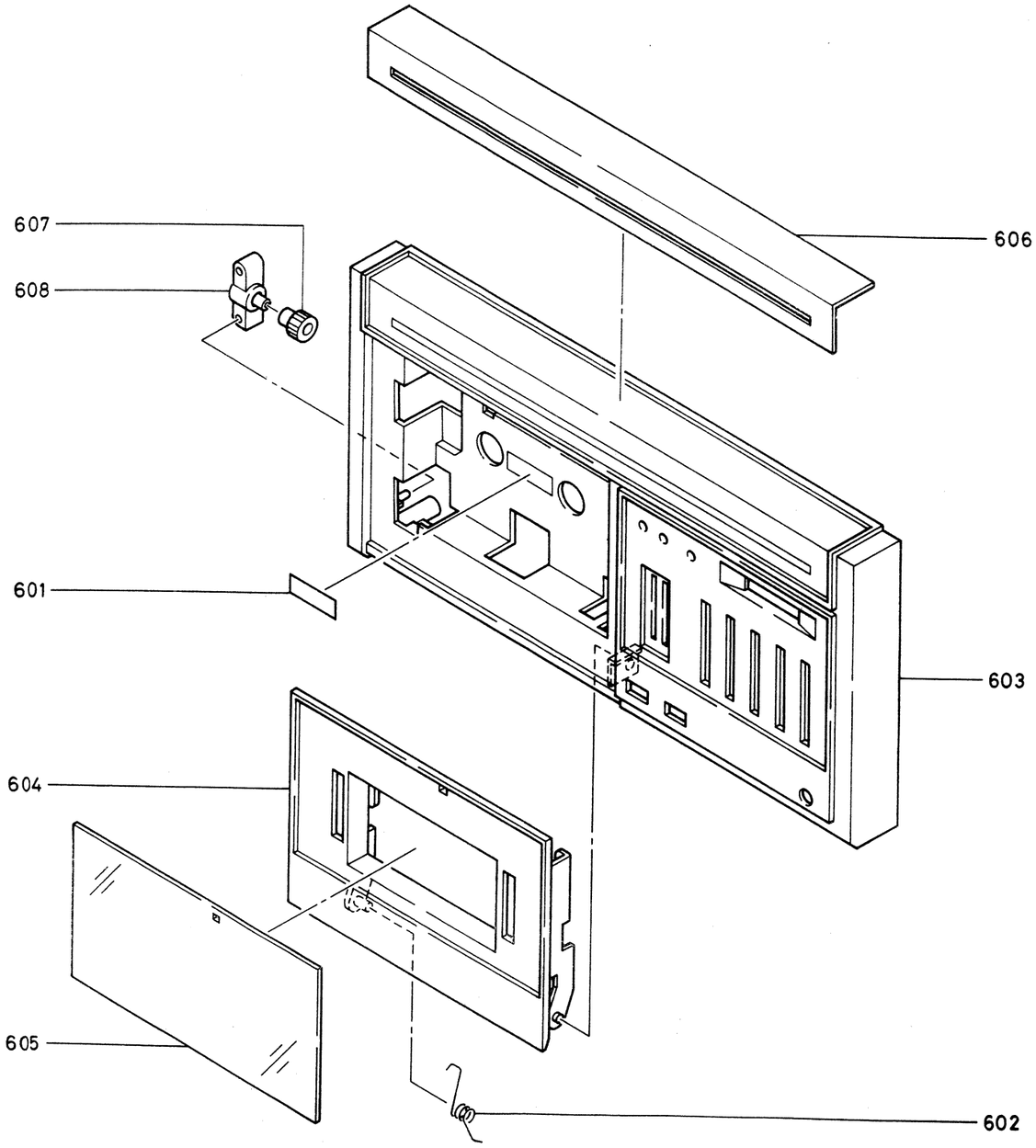
FRONT CABINET UNIT EXPLODED VIEW



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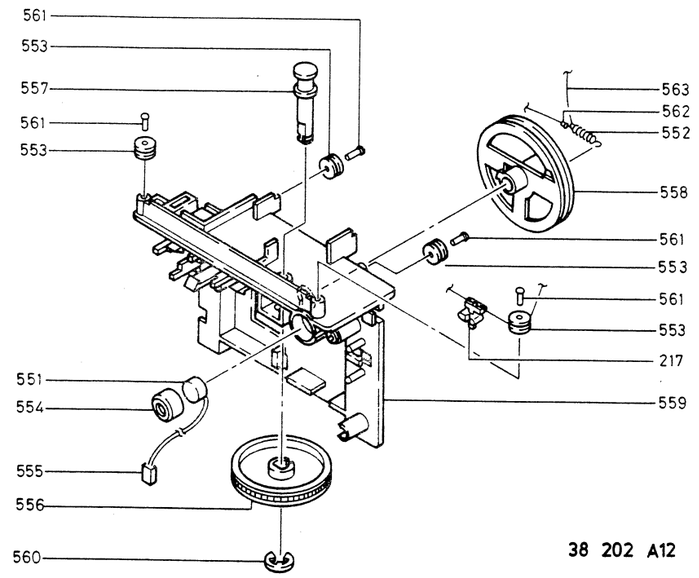
214	4822 253 30021	230	4822 498 10226	607	4822 522 31949
217	4822 450 80964	231	4822 411 61155	608	4822 256 90807
222	4822 443 61621			609	4822 459 80307
223	4822 410 24344			651	4822 303 30312
224	4822 410 24345			653	4822 492 51776
225	4822 403 30489	602	4822 492 41343	654	4822 290 80655
226	4822 443 10088	603	4822 443 50681	656	4822 290 80661
227	4822 459 80308	604	4822 443 61642	657	4822 443 50682
228	4822 411 61165	605	4822 450 60613		
229	4822 411 61166	606	4822 450 60616		

TUNER CHASSIS UNIT EXPLODED VIEW



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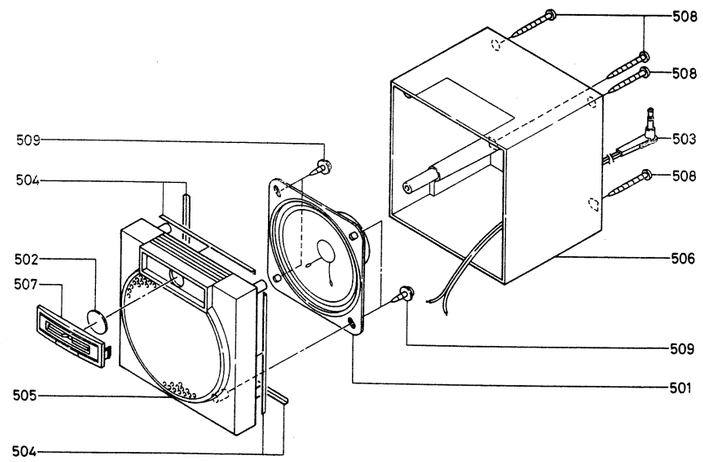
551	4822 242 10049
553	4822 528 81051
556	4822 413 41285
557	4822 535 50095
558	4822 528 40257

SPEAKERBOX UNIT EXPLODED VIEW



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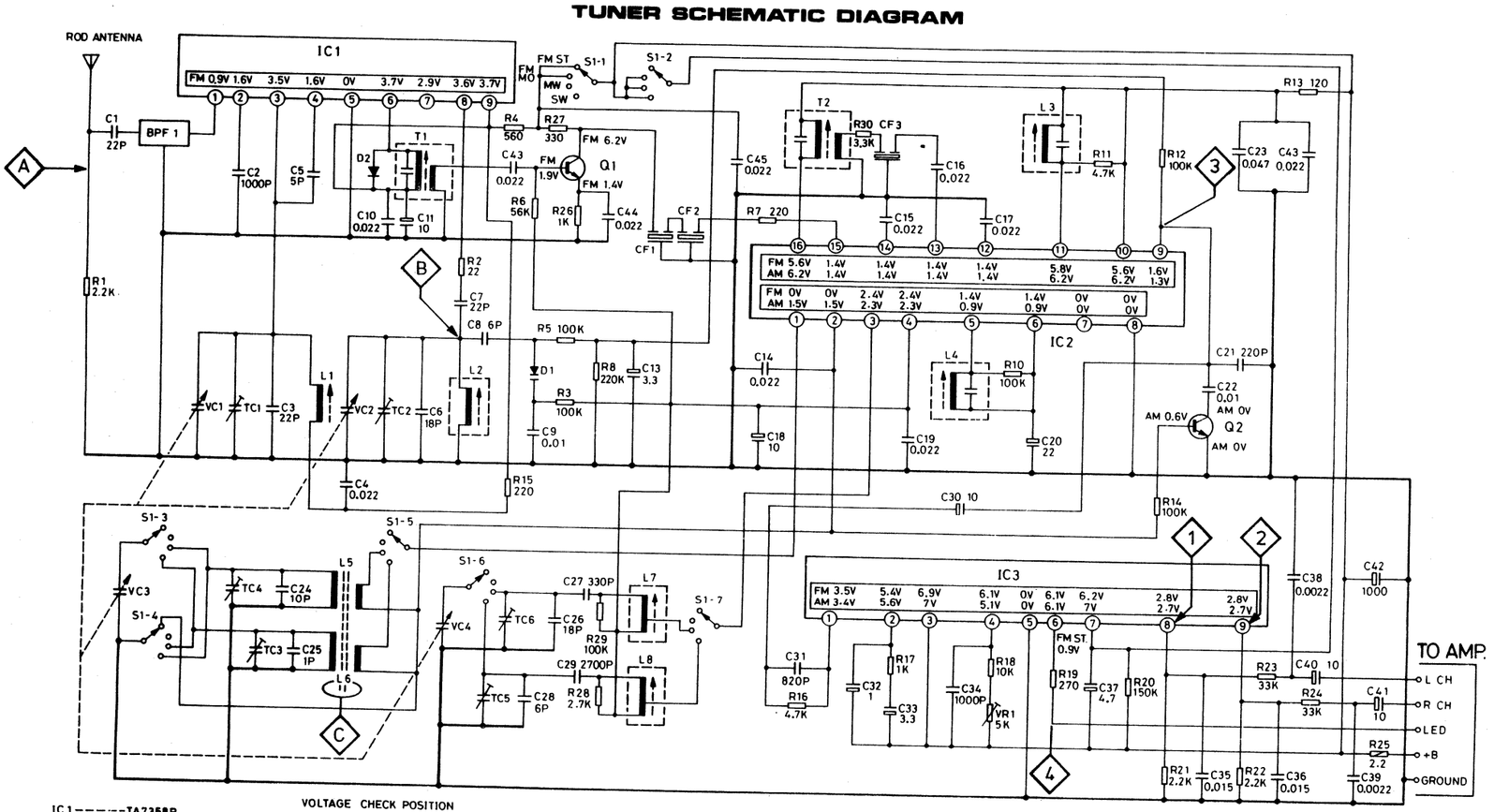
501	4822 240 30305
502	4822 240 30306
505	4822 445 30114
506L	4822 445 20032
506R	4822 445 20033
507	4822 458 30449

Only those parts of which the service code numbers are stated are normal service parts.

CS 102 094

TUNER SCHEMATIC DIAGRAM



IC1 ------ TA7358P
IC2 ------ TA7640AP
IC3 ------ TA7343P

Q1,2 ------ 2SC945-P

D1 ------ SD115
D2 ------ HV80
D3 ------ RD8.2EB1

VOLTAGE CHECK POSITION
FM V --- FM POSITION
AM V --- AM POSITION

S1---FM STEREO/FM MONO/MW/SW SWITCH (FM STEREO POSITION)

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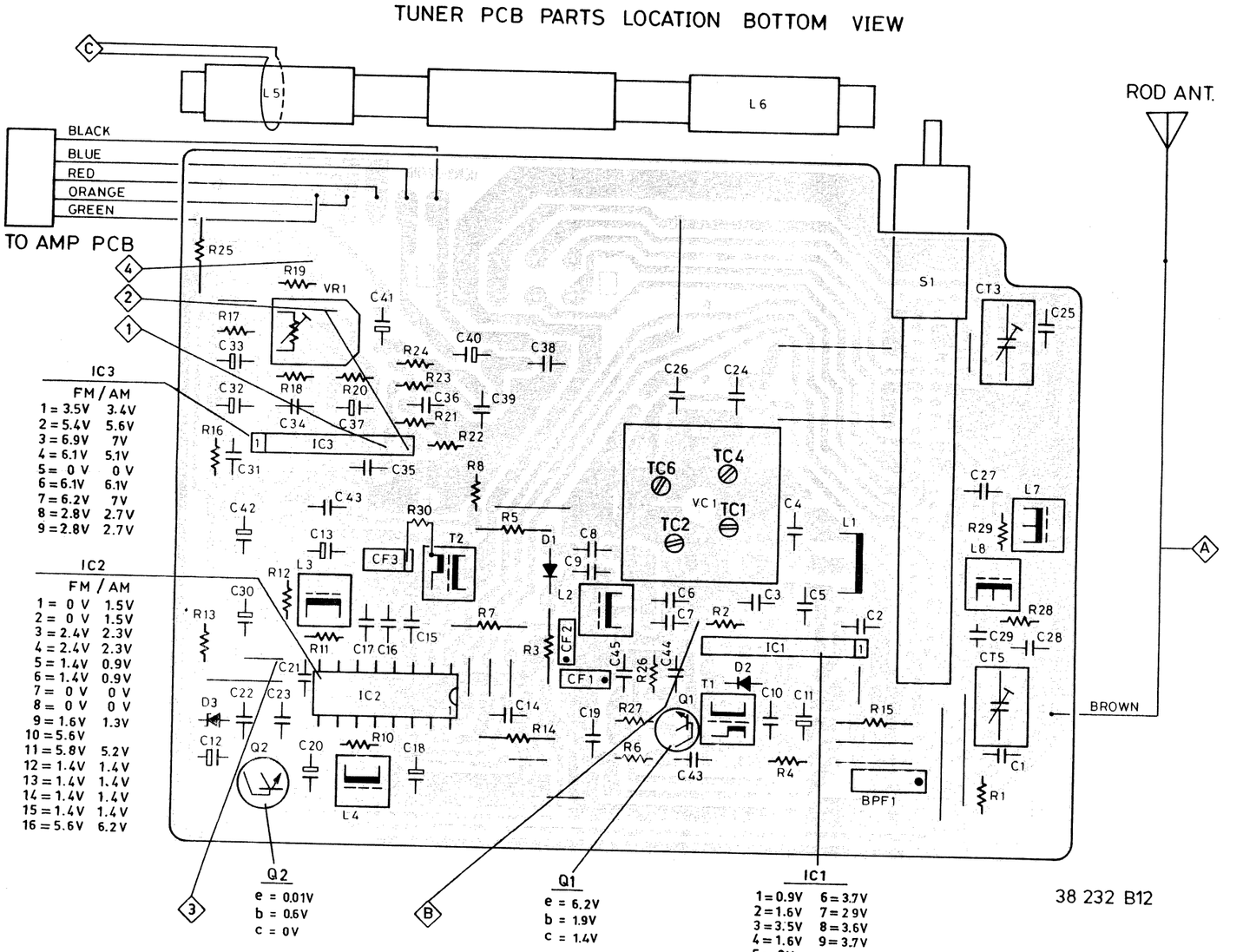
NOTES;
1. ALL RESISTANCE VALUES ARE IN Ω. K=1000Ω M=1000KΩ
2. ALL CAPACITANCE VALUES ARE IN μF. P=10⁻⁶μF
3. ALL RESISTORS ARE 1/6 WATT, UNLESS OTHERWISE SPECIFIED.
4. VOLTAGES MEASURED FROM POINT INDICATOR TO CHASSIS GROUND WITH V.T.V.M AT LINE VOLUME CONTROL MINIMUM AND NO SIGNAL.

(SPECIFICATIONS AND CIRCUITS SUBJECT TO CHANGE WITHOUT NOTICE FOR IMPROVEMENT.)

TUNER PCB PARTS LOCATION BOTTOM VIEW



IC3

	FM	AM
1 =	3.5V	3.4V
2 =	5.4V	5.6V
3 =	6.9V	7V
4 =	6.1V	5.1V
5 =	0 V	0 V
6 =	6.1V	6.1V
7 =	6.2V	7V
8 =	2.8V	2.7V
9 =	2.8V	2.7V

IC2

	FM	AM
1 =	0 V	1.5V
2 =	0 V	1.5V
3 =	2.4V	2.3V
4 =	2.4V	2.3V
5 =	1.4V	0.9V
6 =	1.4V	0.9V
7 =	0 V	0 V
8 =	0 V	0 V
9 =	1.6V	1.3V
10 =	5.6V	
11 =	5.8V	5.2V
12 =	1.4V	1.4V
13 =	1.4V	1.4V
14 =	1.4V	1.4V
15 =	1.4V	1.4V
16 =	5.6V	6.2V

Q2
e = 0.01V
b = 0.6V
c = 0V

Q1
e = 6.2V
b = 1.9V
c = 1.4V

IC1

1 = 0.9V	6 = 3.7V
2 = 1.6V	7 = 2.9V
3 = 3.5V	8 = 3.6V
4 = 1.6V	9 = 3.7V
5 = 0V	

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S-1						
MW	455 kHz △F 10 kHz (50 Hz)	Ⓒ	Max. cap.	T2 L4	③ Symm. MAX.	↕
MW 520-1605 kHz	1650 kHz*	Ⓒ	Min. cap.	TC6	③ MAX.	①
	515 kHz*		Max. cap.	L7		
	600 kHz*		▭	L5		
	1400 kHz*		▭	TC4		
SW 3.9-12 MHz	12.5 MHz*	Ⓒ	Min. cap.	TC5	③ MAX.	①
	3.8 MHz*		Max. cap.	L8		
	4.5 MHz*		▭	L6		
	9 MHz*		▭	TC3		
FM	10.7 MHz △F 250 kHz 50 Hz	Ⓑ Via 22 µF	Max. cap.	T1 L3	③ Symm. MAX.	↕
				L3	③ Symm.	
FM 87.5-108 MHz	108.3 MHz,*△F 22.5 kHz	Ⓐ	Min. cap.	TC2		②
	87.4 MHz,*△F 22.5 kHz		Max. cap	L2		
	90 MHz,*△F 22.5 kHz		▭	L1		①
	106 MHz,*△F 22.5 kHz		▭	TC1		max.

↕ Repeat - Herhalen - Répéter - Wiederholen - Repetera

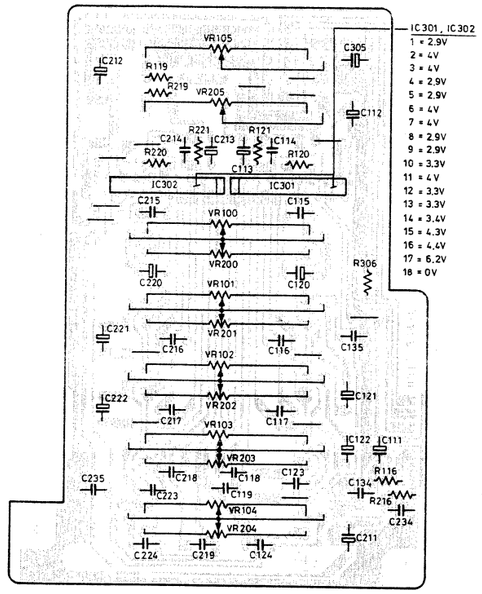
*+1 kHz modulation

Stereo D

FM S-1	No signal		VR1	Freq. counter ④ 38 kHz ± 50 Hz	

"Bei notwendigem Abgleich ist das Gerät auf die gesetzlich vorgeschriebenen Eckfrequenzen abzugleichen".

VOLUME PCB PARTS LOCATION BOTTOM VIEW



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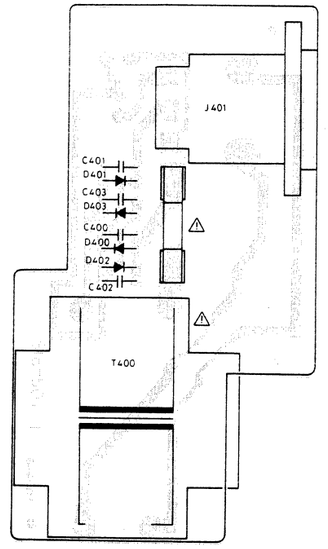
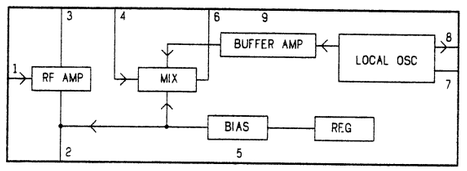
POWER SUPPLY PCB PARTS LOCATION BOTTOM VIEW

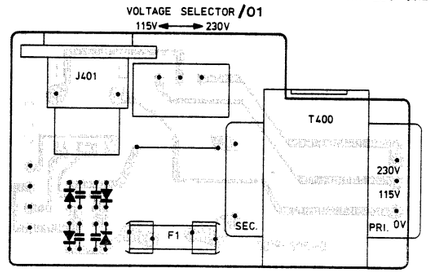


38 200 A12

TDA7358P



PRS.00136
DRA AA4



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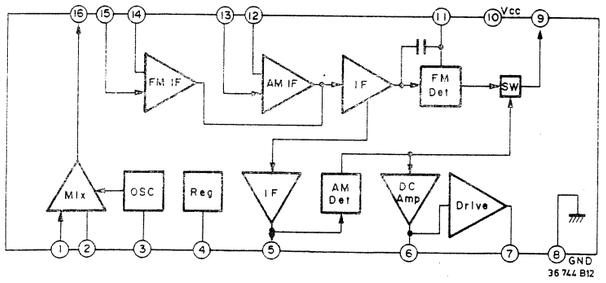
TA-7640AP (FM IF AMP)



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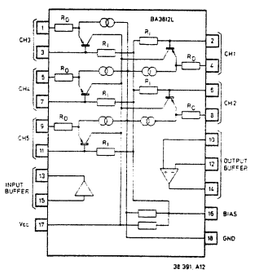
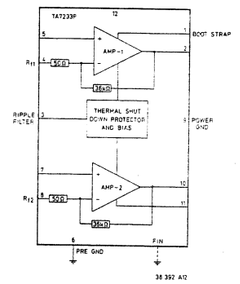


38 391 A12



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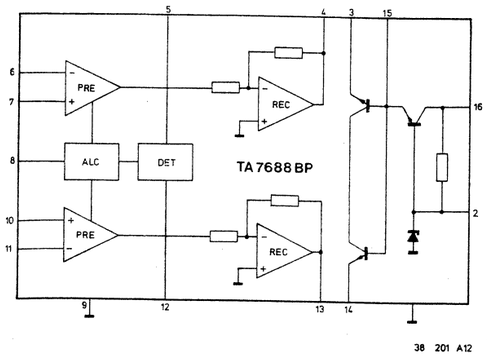
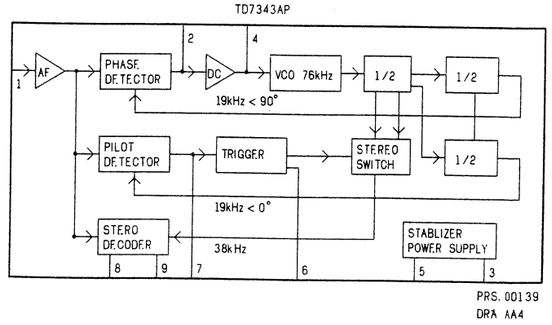


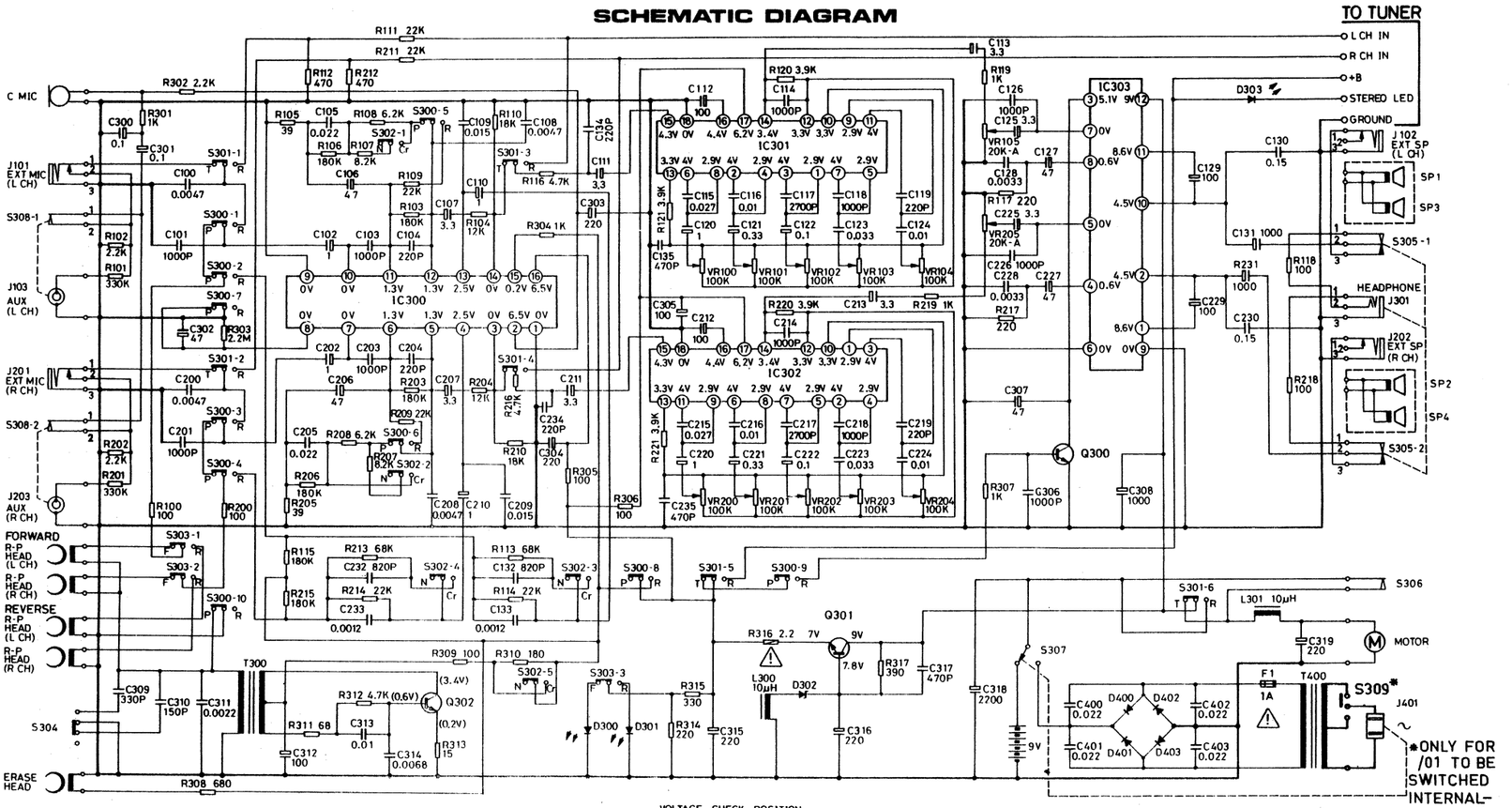
38 201 A12

TD7343AP



PRS. 00139
DRA AA4

SCHEMATIC DIAGRAM



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IC300 ------- TA7688BP
IC301,302 ------ BA3812L
IC303 ------- TA7233P

Q300,302 ------ 2SC1815 - GR or 2SC945-P
Q301 ------- 2SD571-L

D300,301 ------ TLG102A
D302 ------- RD-8.2EB1
D303 ------- TLR102A

S300 -- RECORD/PLAYBACK SWITCH (PLAYBACK POSITION)
S301 -- TAPE/RADIO SWITCH (TAPE POSITION)
S302 -- NORMAL/CrO2 SWITCH (NORMAL POSITION)
S303 -- FORWARD/REVERSE SWITCH (FORWARD POSITION)
S304 -- BEAT CANCEL SWITCH
S305 -- HEADPHONE/SPEAKER SWITCH (SPEAKER POSITION)
S306 -- TAPE ON/OFF SWITCH (OFF POSITION)
S307 -- DC/AC SWITCH (DC POSITION)
S308 -- C MIC/AUX SWITCH (C MIC POSITION)

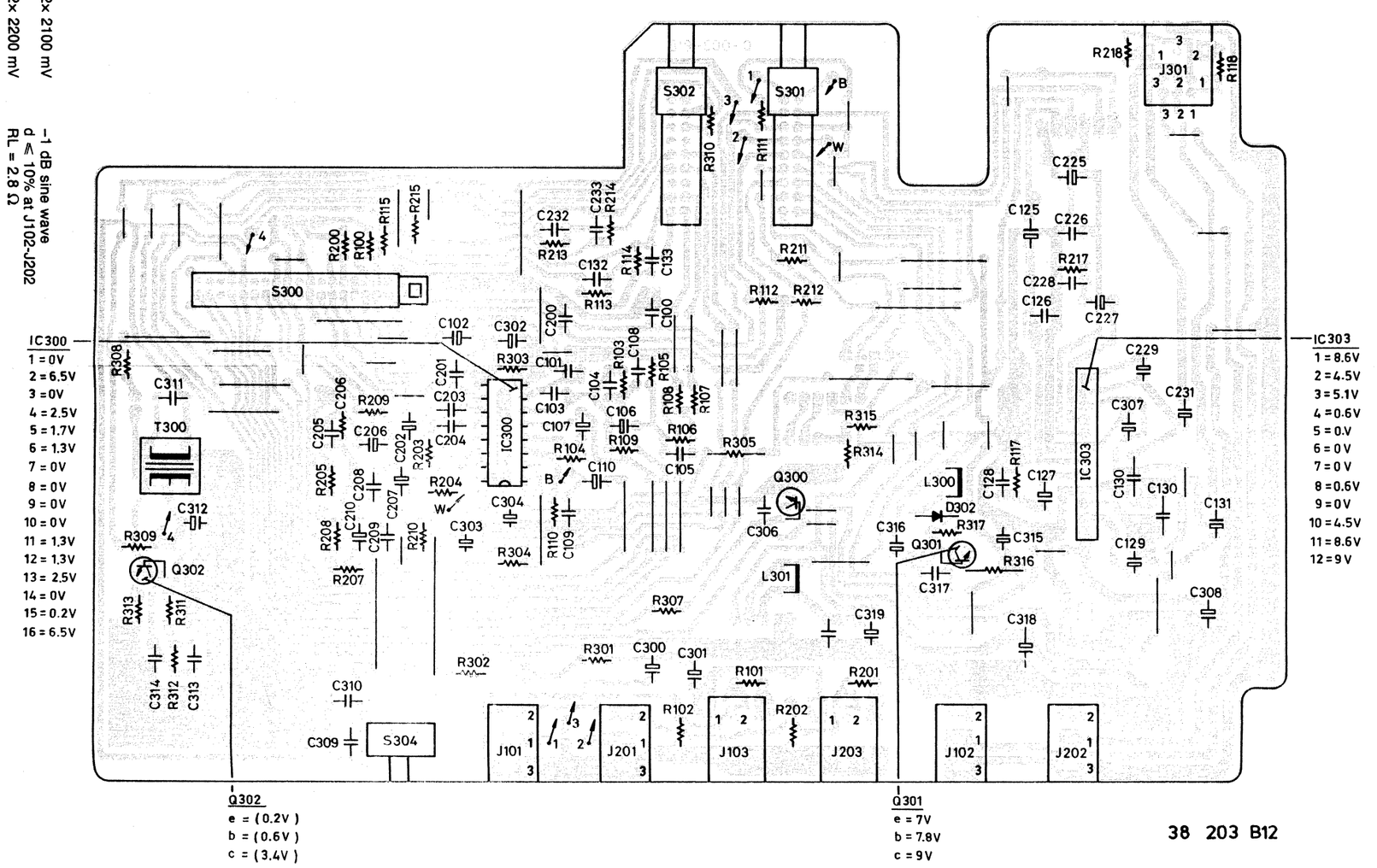
VOLTAGE CHECK POSITION
V -- PLAYBACK POSITION
(V) -- RECORDING POSITION

NOTES;
1. ALL RESISTANCE VALUES ARE IN Ω. K=1000Ω M=1000KΩ
2. ALL CAPACITANCE VALUES ARE IN μF. P=10^6 μF
3. ALL RESISTORS ARE 1/6 WATT, UNLESS OTHERWISE SPECIFIED.
4. VOLTAGES MEASURED FROM POINT INDICATOR TO CHASSIS GROUND WITH V.T.V.M AT LINE VOLUME CONTROL MINIMUM AND NO SIGNAL.

(SPECIFICATIONS AND CIRCUITS SUBJECT TO CHANGE WITHOUT NOTICE FOR IMPROVEMENT.)

AMPLIFIER PCB PARTS LOCATION BOTTOM VIEW

2x 2100 mV
2x 2200 mV
-1 dB sine wave
d ≤ 10% at J102-J202
RL = 2.8 Ω



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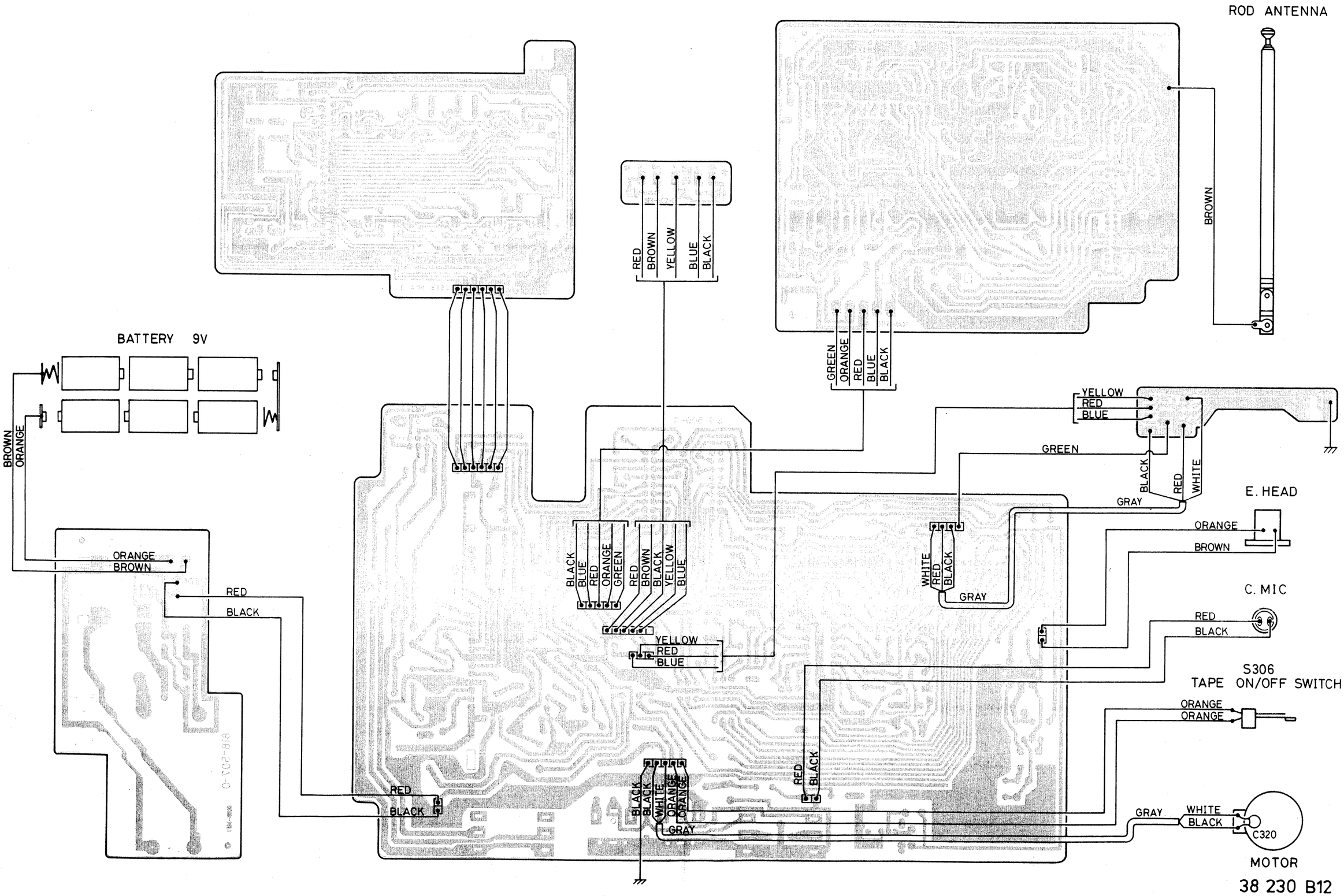
WIRING DIAGRAM



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CS 102 097

GREASING PROCEDUCE

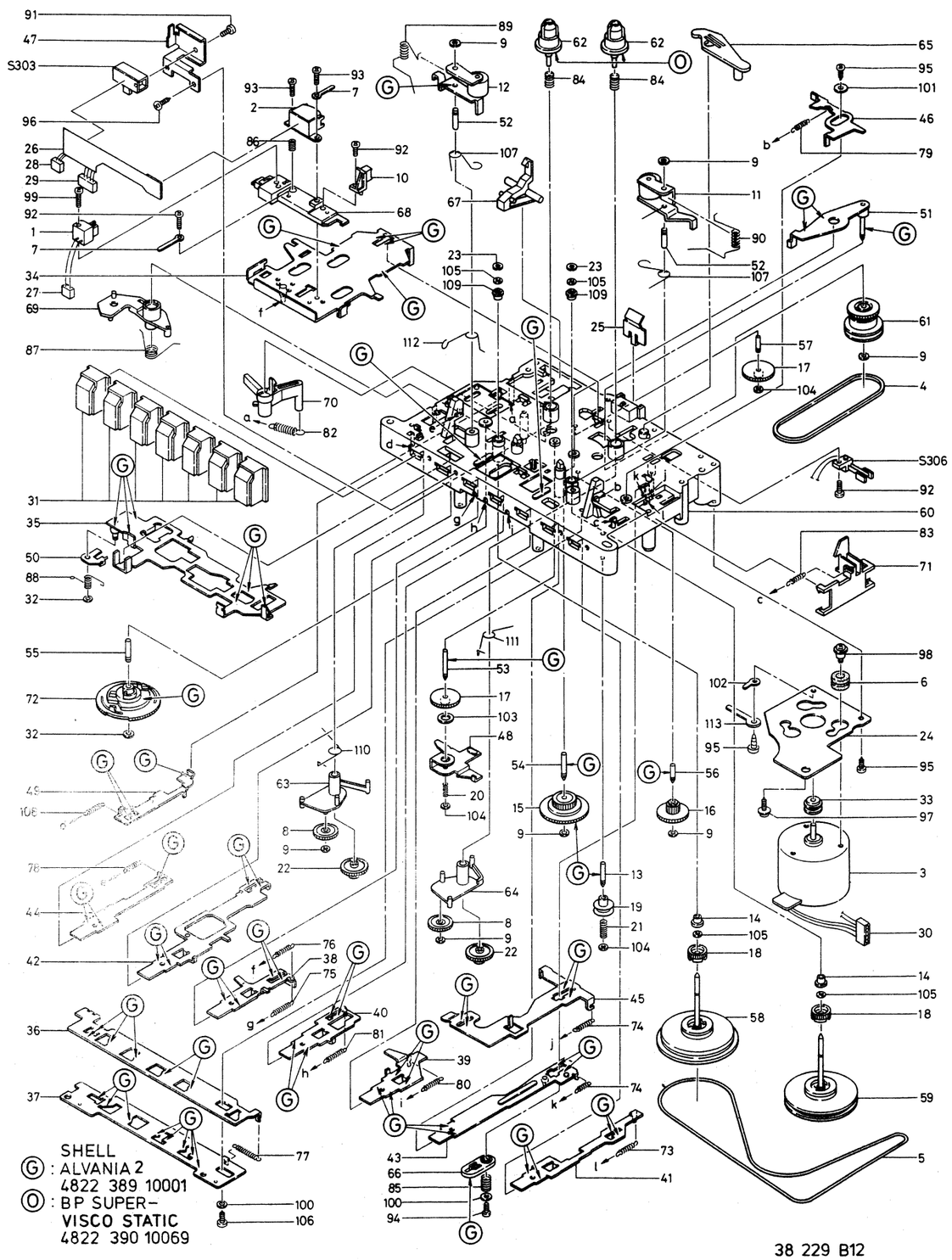

Fig. 1

Adjustment	Cassette	Recorder in position	Measure on	Read on	Adjust with
Tape speed	SBC420 3150 Hz	Play	J102/J202 across 2.8 Ω	Wow and flutter meter	Preset in motor
Azimuth	SBC420 8 kHz	Play	J102/J202 max. and equal output	mV meter	Left screw 93 R/P head Fig. 1
Take up torque Forward and reverse	811/CTM 30-50 g/cm	Play			

1	4822 249 40186	41	4822 403 30481	74	4822 492 32545
2	4822 249 10247	42	4822 403 30482	75	4822 492 32546
3	4822 361 20607	43	4822 403 30483	76	4822 492 32547
4	4822 358 30494	44	4822 403 30484	77	4822 492 32548
5	4822 358 30495	45	4822 403 30485	78	4822 492 32549
6	4822 462 40818	46	4822 403 52491	79	4822 492 32551
8	4822 522 31952	49	4822 403 30486	81	4822 492 32552
10	4822 403 52489	50	4822 403 52492	82	4822 492 32553
11	4822 403 40206	51	4822 403 52497	83	4822 492 32554
12	4822 403 40207	52	4822 535 91893	84	4822 492 51777
13	4822 535 91892	53	4822 535 91894	85	4822 492 51778
14	4822 520 30408	54	4822 535 91895	86	4822 492 51779
15	4822 522 20353	55	4822 535 91896	87	4822 492 41344
16	4822 522 31953	56	4822 535 91897	88	4822 492 41345
17	4822 522 31954	57	4822 535 91898	89	4822 492 41346
18	4822 522 31955	58	4822 528 60226	90	4822 492 41347
19	4822 528 81058	59	4822 528 60227	98	4822 502 12031
20	4822 492 51774	61	4822 528 20432	107	4822 492 41348
21	4822 492 51775	62	4822 528 10524	108	4822 492 32543
22	4822 522 31956	63	4822 403 30487	109	4822 520 30417
23	4822 532 11231	64	4822 403 30488	110	4822 492 41349
25	4822 492 63264	65	4822 403 52493	111	4822 492 41351
32	4822 410 24346	66	4822 403 52494	112	4822 492 41352
33	4822 528 81059	67	4822 403 52495	S303	4822 277 60237
35	4822 403 30474	68	4822 403 52496	S306	4822 277 30729
36	4822 403 30475	69	4822 403 30491		
37	4822 403 30476	70	4822 403 30492		
38	4822 403 30477	71	4822 403 30493		
39	4822 403 30478	72	4822 522 31961		
40	4822 403 30479	73	4822 492 32544		

(GB) MAINTENANCE

It is recommended to clean the recorder and to lubricate the principal lubrication points after approx. 500 hours of operation.

To be cleaned with alcohol or spirit:
- Erase head
- Recording/playback head
- Belts
- Capstan
- Pressure roller

(F) ENTRETIEN

L'appareil devra être nettoyé env. 500 heures de marche et lubrifié aux points les plus importants.

Nettoyer les éléments suivants à l'alcool ou à l'alcool à brûler:
- Tête effacement
- Tête enregistrement/reproduction
- Corroies
- Cabestan
- Galet presseur

(NL) ONDERHOUD

Aanbevolen wordt het apparaat na ca. 500 bedrijfsuren schoon te maken en op de belangrijkste punten te smeren.

Schoonmaken met alcohol of spiritus:
- Wiskop
- Opneem-/weergeefkop
- Snaren
- Toonas
- Drukrol

(D) WARTUNG

Es empfiehlt sich, das Gerät nach ca. 500 Betriebsstunden zu reinigen und die wichtigsten Schmierpunkte zu schmieren.

Reinigen mit Alkohol oder Spiritus:
- Löschkopf
- Aufnahme/Wiedergabe-kopf
- Antriebsriemen
- Tonachse
- Andruckrolle

(I) MANUTENZIONE

E consigliabile pulire l'apparecchio dopo circa 500 ore di funzionamento e di lubrificarne i punti principali.

Pulire con alcool
- Testina di cancellazione
- Testina di registrazione/riproduzione
- Cinghie
- Cabstan
- Rullo preminastro

(GB)

Safety regulations require that the set be restored to its original condition and that parts which are identical with those specified be used.

(NL)

Veiligheidsbepalingen vereisen, dat het apparaat in zijn oorspronkelijke toestand wordt teruggebracht en dat onderdelen, identiek aan de gespecificeerde, worden toegepast.

(D)

Bei jeder Reparatur sind die geltenden Sicherheitsvorschriften zu beachten. Der Originalzustand des Geräts darf nicht verändert werden; für Reparaturen sind Original-Ersatzteile zu verwenden.

(I)

Le norme di sicurezza esigono che l'apparecchio venga rimesso nelle condizioni originali e che siano utilizzati i pezzi di ricambiago identici a quelli specificati.

(F)

Les normes de sécurité exigent que l'appareil soit remis à l'état d'origine et que soient utilisées les pièces de rechange identiques à celles spécifiées.